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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/672,808

09/26/2003

Peter Nilsson

SSJR 3370-P0058A

8907

24126

7590

05/31/2005

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EXAMINER

BUTLER, DOUGLAS C

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/672,808 | <b>Applicant(s)</b><br>NILSSON ET AL. |  |
|                              | <b>Examiner</b><br>Douglas C. Butler | <b>Art Unit</b><br>3683               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*HC*

### DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-45 are pending.

3. Note the attached Search Report for WO 2005/030549 A3, which was published April 7, 2005, which was after the last office action and latest response filed by applicants. Four different Category X references are included in the report.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Moseley et al(US4995483), of record.

Note Figure 3, column 5, line 16 to column 6, line 42 of Moseley et al. which appears to encompass the comparison of commanded to current positional signals.

As per column 5, line 16 to column 6, line 42 of Moseley et al:

"In FIG. 3, a motor position feedback control system is also shown and it is generally indicated by reference numeral 130 as it may be applied to the electrically operated brake actuator 100. The control system 130 comprises a microprocessor controller 140 which is adapted to receive a plurality of input electrical signals from various sources and to analyze the signals such that an output feedback signal may be generated. The feedback signal controls brake clamping and release in accordance with the desires of the aircraft pilot or in accordance with an overriding command signal from the antiskid system for antiskid braking of the aircraft.

More specifically, the microprocessor controller 140 receives input signals 142 from a pilot's brake pedal position transducer 132, the signals being indicative of the amount of braking desired by the pilot. The controller 140 also receives electrical input signals 144 from an antiskid control 134, the signals including a brake release signal as determined by the antiskid system of the aircraft. The signals 144 are already available on the aircraft having antiskid capabilities and it is not an important consideration as to how or where such signals originate or are generated. It is already provided in such antiskid systems that a brake release command signal from the antiskid will automatically override the pilot brake pedal generated signal when the magnitude of the brake release signal meets predetermined levels.

The microprocessor controller 140 also receives electrical signals 146 from a contact sensor means 136 which is operatively mounted with respect to the reciprocating drive mechanism. In the particular showing of FIG. 3, the contact sensor means 136 is mounted at the outboard end of the axially translating screw member 114. The contact sensor means 136 may comprise any known type of switch means which is closable upon contacting engagement being made with the brake pressure plate. Preferably, the contact sensor means 136 comprises a load cell which exhibits a predetermined force threshold such that a signal 146 is generated when the force threshold is exceeded. It is important that the contact sensor output signal 146 is generated at the instant when brake clamping is initiated. In this respect, the limit of the load cell threshold is preestablished such that the brake pressure plate 32 is moved through an established clearance distance which exists when brake clamping is released. The clearance distance is a known factor and conventionally compensates for brake wear in the brake disk stack and it will remain the same irrespective of any changes in the brake wear. If, for example, a threshold force of one hundred pounds is required to move the brake pressure plate 32 through the clearance distance before brake clamping is initiated, then a signal 146 will only be generated when the load cell threshold of one hundred pounds is exceeded. It should be apparent from this, that a load cell type contact sensor may be positioned within the reciprocating drive mechanism where the clamping force is resisted. For example, the load cell sensor may be

positioned at 136' where the clamping force is transmitted to the salt member 112 from the screw member 114 and thus also to the load cell sensor 136'.

It should be pointed out here that testing of an electric brake actuator 100 has established a known and fixed relationship between (a) the torque motor rotor position past a "zero" position when brake clamping is initiated, (b) the axial displacement of the reciprocating drive ram member and, (c) the actuator clamping force required for full one-hundred percent commanded braking. In this respect, it will be appreciated that when a brake clamping initiation signal 146 is received in the microprocessor controller 140 and the exact position of the motor rotor is known by reason of a signal 148 from the rotor position resolver 138, the controller may initiate a rotor revolution count from the "zero" position and then continue counting rotor revolutions until the required brake clamping effort is realized. For example, if the pilot command generates a pedal signal 142 indicative of a requirement for fifty percent of full brake clamping force, the controller will then send a power-on signal 150 to the torque motor 102 which also activates the reciprocating drive mechanism 110 such that the ram member moves into contacting engagement with the brake pressure plate. The pressure plate is moved through the pre-set clearance distance and, the instant that brake clamping is initiated by reason of a clamping force above the load cell threshold, a signal 146 is received in the controller 140 which begins a count of torque motor revolutions until that number of revolutions is reached which provides fifty percent brake clamping

force. By the same token, if the pilot signal 152 indicates a requirement for one-hundred percent brake clamping, the controller 140 will continue to count torque motor rotor revolutions until that number is reached indicative of one-hundred percent brake clamping.”

6. Claims 1-45 are rejected under 35 U.S.C. 102(a) as being anticipated by Schautt(DE 10156348C1), of record.

Although not available as a reference, see Schautt(US 2004/0108175A1) for a translation of the German document. If this is unacceptable to applicants, the examiner will request a translation of the above applied non-English references from STIC within the USPTO.

Schautt (DE 10156348C1) appears to encompass the comparison of commanded to current positional signals.

7. Note the additional documents to Walenty et al(409), Ichinose et al(805), Ichinose et al(228), Bohm(689), Bohm(108), Ralea et al(069), Bohm et al(507), Ralea(640) and Klein(414) with position indicators for brake actuators.

8. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.


9. Currently, no conflict exists between the instant claims and the claims of continuation-in-part SN 11/088,282 and continuation-in-part 11/088528.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas C. Butler whose telephone number is 571-272-7115. The examiner can normally be reached on M-F 5:30 am to 2pm.

Art Unit: 3683

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Douglas C. Butler  
Primary Examiner  
Art Unit 3683

